



ENVIRONMENTAL SERVICES DEPARTMENT

AIR QUALITY DIVISION

1001 N. Central Ave., Suite 200

Phoenix, Arizona 85004

(602) 506-6010

(602) 506-6985 (FAX)

LAER Status Report

Duke Energy Arlington Valley Energy Facility II (AVEF II)

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The Maricopa County Environmental Services Department (MCESD) Air Quality Division has been evaluating the air quality permit application and proposed emission limits submitted by Duke Energy for the Arlington Valley Energy Facility II (AVEF II). As part of this review, as requested by the Arizona Corporation Commission (ACC), the MCESD has determined the emission control systems and emission limits that are equivalent to Lowest Achievable Emission Rates (LAER).

LAER is defined by MCESD Rule 240.209 as "...the most stringent emissions limitation that is achieved in practice by the class or category of stationary source. ..." LAER is ordinarily applied to sources located in nonattainment areas. Duke Energy has agreed with the ACC to apply limitations equivalent to LAER for AVEF II.

Note that LAER limits are established *without* consideration of cost. In order to determine the most stringent emissions limitation that is achieved in practice, MCESD reviews actual emissions and permitted emission limits of similar sources. In an attempt to ensure that the most stringent emission limits are established, MCESD carefully evaluates *permitted* emission limits as well as actual emission test results to establish LAER; even if the permitted limits have not yet been demonstrated as "achieved in practice." Similar combined cycle power plants from throughout the United States, in addition to plants in Arizona and Maricopa County, were evaluated. MCESD has had a series of teleconferences and meetings with representatives of Duke Energy to help identify other permitted combined cycle plants of a similar size and design to AVEF II, and MCESD has been in contact with the USEPA Region IX staff, and other state and local permitting agencies.

After careful evaluation, MCESD has established the control technology and emission limits shown in Table 1 as equivalent to LAER for AVEF II. Duke Energy has agreed to accept these limits, and the lower emission limits will be incorporated into the AVEF II permit.

Table 1
LAER Emission Limits for AVEF II

Source	Pollutant	Control Technology	Emission Limit
Combustion Turbine Generators	NO _x	Selective Catalytic Reduction	2.0 ppmvd @ 15% O ₂ , 1-hour average
	CO	Catalytic Oxidizer	2.0 ppmvd @ 15% O ₂ , 3-hour average, duct burners OFF, 3.0 ppmvd @ 15% O ₂ , 3-hour average, duct burners ON
	VOC	Catalytic Oxidizer	1.0 ppmvd @ 15% O ₂ , 3-hour average, duct burners OFF, 4.0 ppmvd @ 15% O ₂ , 3-hour average, duct burners ON
	PM ₁₀	Good combustion practice and pipeline quality natural gas fuel only	15 pounds per hour, duct burners OFF, 19 pounds per hour, duct burners ON
Cooling Tower	PM ₁₀	High efficiency drift eliminators	0.0005% drift, TDS limit 12,000 mg/kg